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CLINICAL REMARKS

ON

SEVERAL INTERESTING CASES

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BALTIMORE,

BY

GEORGE REULING, M. D.,
SURGEON IN CHARGE.

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(Reprint from "Knapp's Archives of Ophthalmology and Otology.")

A Case of Myosis, caused by Paralysis of the Left Side of the Cervical Portion of the Sympathetic, in Consequence of a Gun-shot Wound. By GEORGE REULING, M. D., Surgeon-in-Charge of the Maryland Eye and Ear Institute, Baltimore, Md.

In the year 1866, an officer of the army, Capt. McC., was shot through the left side of his neck. The bullet entered about two inches above the clavicle, immediately behind the belly of the sterno-cleido-mastoid, and passed out about half an inch higher up at the anterior edge of the platysma myoides. During the two following years, the gentleman sank rapidly in consequence of small, purulent formations along the course of the sheath of the sterno-mastoid, as well as because of a pharyngeal soreness, which, greatly increased by every attempt at deglutition, amounted at times to a spasmodic seizure. The patient had been pronounced a hopeless consumptive by his medical attendants, when one day a little piece of cloth belonging to the coat collar, which had formerly been penetrated by the bullet, appeared through the open wound, which very soon after became scarred over, and the patient grew visibly stronger. Being put on a liberal diet, and having had the benefit of a voyage by sea to Key West, he completely recovered; so much so, indeed, that he undertook the management of a farm.

In the year 1868, while cicatrization was going on, he for the first time noticed shooting pains in the arm of the affected side, radiating especially from the little finger. At first, these pains appeared only after great exertions, or in consequence of a "cold," but in the fall of 1869, the neuralgia became of daily recurrence and great severity. At the same time, the patient was aware of a new symptom—a myotic condition of the left eye (of sudden occurrence), and accompanied with lancinating pain. He then came to me for advice.

Status præsens.—The patient is a wiry, though muscular man, 36 years old. At the left side of his neck the characteristic scar is seen running in the before-mentioned direction. Immediately above and below the clavicle, and partly in contact with it, there are three separate and distinct scars of the formerly fistulous openings. The neck is somewhat constrained in its movements; the head cannot be turned very readily to the right, and is a little directed towards the left side because of a slight shortening of the skin and its muscles. The affected arm differs in nothing from the healthy arm, either in development, structure or temperature. In following the course of the nerves of the arm, however, and pressing tightly with the thumb, a well marked *point douleureux* is met with over the rotula of the ulnar nerve, as well as near the insertion of the pectoralis major into the humerus—symptoms which point to a neuralgia consequent upon pressure exerted by means of cicatricial formations on branches of the brachial plexus.

The left eye differed materially from the right—the pupil being contracted to the size of a pin's head. Not only was this the case, but the pupil was turned somewhat awry in its direction from below and inward, to above and outward; light had no influence whatever upon it—it remained motionless. Neither its size nor its form was affected by the direct light trasmitted by the sun, nor when that light was intercepted by the hand being placed before the eyes. That the pupil was contracted to its maximum extent was shown by the fact that the calabar bean could cause it to contract no further. $S=\frac{20}{200}$, with—$\frac{1}{18}=\frac{20}{20}$. At a distance of 3″, the finest writing could be read, although the patient declared that he could read only a few words at a time. When he held the eye steady and looked at large objects, he could discern only portions of them, the field of vision showing a considerable concentric limitation.

After a one-grain solution of atropia had been instilled, and the pupil of the affected eye had, after the lapse of half an hour, enlarged to the diameter of the normal pupil on the right side, a healthy state of the internal stuctures, with the exception of a slight hyperæmia of the choroid and retina, was discernable.

If now we sum up the various points of this interesting case, our diagnosis will be: paralysis of the cervical portion of the sympathetic, caused by the gradual contraction of the cicatrix left after a gun-shot wound.

My treatment consisted in instilling a solution of atropia twice a day for several weeks, as well as in the application of the continued current to the sterno-mastoid and along the course of the ulnar nerve.

Despite the little hope of sucess I entertained, since the cause of the suffering was permanently present, the neuralgic pain abated in frequency and violence after two days. The effect of the atropia, which during the first few days was dissipated after six or eight hours, became of the usual duration after the sixth day. As soon as this much was accomplished I prescribed the ungt. cinereum to be made into an inunction with the extract of hyoscyamus, and had it rubbed into the scar. Every fifth day I applied one of Heurteloups's artificial leeches to do away with the hyperæmic state of the choroid. After he had been three weeks under treatment I was enabled to discharge the patient, into whose eye, in order to note the state of the pupil, I had not for the last week instilled a drop of atropia.

The gentleman left me with a pupil of nearly the normal size, and visual power but very slightly impaired, $S=\frac{20}{30}$, with—$\frac{1}{40}=\frac{20}{20}$.

(Reprint from the "Philadelphia Medical Times.")

A Case of congenital want of the Iris in both eyes, with perfect power of accommodation. By George Reuling, M. D., Surgeon to Maryland Eye and Ear Institute, Baltimore.

Before entering upon the description of our case, it is of the utmost importance to recall to mind the anatomical condition and devolopment of the iris and the neighboring structures, as well as to consider the physiological part the iris plays in the accommodative process.

The human iris commences to form during the fourth month of pregnancy. At the edge of the fœtal choroid, at which the ciliary processes have already begun to form, and very near the latter, a closed band, narrow and grayish, almost perfectly transparent, the posterior surface being not yet covered by the dark pigment which we know as uvea, is perceptible about this period of intra-uterine life. This ring is the foundation, so to say, of the future iris. Anteriorly it soon takes on a bluish appearance, caused by the uveal pigment which now begins to be developed and to be reflected through. Very soon after the first appearance of the rudimentary iris, the tensor of the choroid is formed, which is at first a very narrow circular band all along the sclero-choroidal border. Soon however it gradually extends anteriorly and posteriorly, in proportion to the growth of the iris, and becomes in this manner a point of external support to the iris at the now very prominent border formed by the junction of the sclerotic with the cornea. After the tensor has advanced forwards, it inclines, so to speak, directly against the point at which the ciliary margin of the choroid terminates in the incipient ciliary processes, and, describing a sharply defined margin, receives the ciliary border of the iris within it. It is thus that on its internal surface, the choroidal tensor gets to be a secure and intimate means of communication between the choroid and the iris, whilst externally it is connected with the advancing margin of the sclerotic.

Let us now go back to the consideration of the formative process of the iris. As the iritic parenchyma progressively developes, the pupil, which is not quite circular, yes, somewhat oblong on the narrow side of the just formed fœtal iris, and which at first is very large, gradually becomes smaller. The connection existing between the ciliary edge of the iris and the choroidal border is gradually broken by means of the condensation of the choroidal tensor and the increasing mass of the uveal pigment, and very soon the tissue-like connection disappearing, the loose communication gives place to an immediate junction of the iris and the choroid. The pupillary membrane which afterwards is formed, renders the junction still more permanent. This membrane arises from the surface of the fully developed tensor choroideæ, lies on the anterier face of the iris, and is transformed *into the me*mbrane of Zinn. The iris, therefore, is firmly fixed at its ciliary margin, at the edge of the choroid, as well as at the tensor.

In the child born at full term, the ciliary border of the iris is perfectly smooth, and is attached to the tensor of the choroid. As the iritic ring grows more and more in breadth, causing the pupillary space to become narrower thereby, the anterior surface of the iris is seen to be gradually the seat of several cricular bands. These, similar in appearance to the rings on the cut trunk of a tree, represent the rudimentary circular fibres of the iris. The radiating muscular fibres supersede these circlets which become limited in fact to the pupillary edge of the iris. While the muscular fibres proceed thus towards their perfect formation, the iris develops, becomes broader, and the stroma, as well as its anterior and posterior surfaces, become filled with pigment granules and cells. The membrana pupillaris, which is still present, arises from the tensor of the choroid, passes over the iris to the pupil over which it spreads, concealing it completely for a certain time. Histological examination of the iritic parenchyma at this time brings to light closely aggregated cells and uneven fibres possessing the characteristics of and belonging to the family of the *cellular tissue*. The vessels of the iris are derived from the ciliaries, whence they pass in the form of circular branchlets towards the pupillary edge. It is not my design to enter upon a minute anatomy of these bloodvessels. My object is to consider the iris, as a whole, in its relation to those neighboring structures which take part in the accommodative process.

The ciliary processes are covered at first by a sort of pigmentary membrane which, when the iris has begun to form, leaves its original seat, passes on to the posterior face of the iris and is known as *uvea*.

The membrana Zinii (zonula of Zinn) is formed from the membrana pupillaris which, lying in close contact with the iris, grows into it, if I may use the expression, at several points, whilst at others the connection between it and the iris is but a loose one. Thus it is that rugosities arise which finally form a whitish network, the perfect development of which completes the formative process going on in the fœtal iris.

If we recall what has just been said, we will find, that the formation of the iris depends upon and arises entirely from the choroid; that a normal or abnormal state of the iris is caused by a similar condition of the choroid. The ciliary processes are the "go-betweens" (so to say)—the assisting organs in all these relations between the two membranes. Von Ammon and many others have conclusively proven the fact, that structural lesions of the choroid occasion similar affections in the ciliary processes, and that these again exert a decided influence upon the structure of the iris.

In the case before us, one, be it remembered, of total absence of the iris, we must take it for granted that the ciliary processes in the entire area of the ciliary body were so imperfect in structure, that the iritic ring could not be formed at their anterior extremities, though indeed both uvea and ciliary ligament were present *in toto.*

I will now enter upon the description of my case:

Miss S. S., of Washington (D. C.), 17 years of age, a pupil of a Baltimore educational institute, sought advice because of some ocular trouble she usually experienced after long continued reading. On an examination, I found the iris to be entirely absent from both eyes. The lens, which was clearly visible, was crossed here and there by opaque, sharply defined, for the most part linear striations, which, as a general thing, followed the direction of the lenticular fibres, and but slightly interfered with the power of sight. The lenticular edge was entirely visible, the lens was in its natural position, the retina and the optic nerve, as well as the bloodvessels perfectly normal. The eyes were emmetropic. No. I. Test-type of Snellen was read at a distance of 10″ $S=\frac{20}{30}$ R., and $\frac{20}{40}$ L. There was slight insufficiency of the recti, righted by means of a 4° prism. The fine black circle surrounding the periphery of the lens was no doubt caused by the imperfectly developed ciliary processes, as well as by the normal choroidal tensor over which the dark uveal stratum passed. The range of the accommodation was almost $\frac{1}{6}$, for after a 2° prism had been applied, Snellen No. I. could be pefectly well distinguished at 4″ to 12″: $\frac{1}{4}-\frac{1}{6}=\frac{1}{12}$.

During the accommodation for near objects, the black lenticular margin was observed to grow broader; when the eye gazed at distant objects, it became narrower; thus proving that it moved *from and* advanced towards its *point d'appui.* This latter circumstance also confirms the fact of an increase and diminution in the diameter of the lens.

I observed this phenomenon to an even more decided degree upon dropping into her eyes a solution of atropia, and introducing the calabar-bean (gelatin-discs). After introducing two of these latter, a pretty severe pain set in and continued for over an hour. Even after the lapse of two hours the pain returned, accompanied by a copious discharge of tears, whenever the accommodative power was brought into requisition.

The punctum proximum was (proximately) determined to be 4″, whilst after a two-grain solution of atropia had been instilled, it was found to be 14″.

This observation is confirmed by Otto Becker, who found that in albinotic eyes, the iris being transparent, the space between the ciliary processes and the edge of the lens becomes increased and diminished during the different conditions of the accommodative process, as well as after the introduction of calabar bean or atropia.

Our case is another proof, therefore, of the exclusive activity, i. e., necessity of the ciliary muscle in the process of the accommodation. It also goes to prove that the ciliary ligiment, or rather ciliary plexus, is, like the iris, influenced by mydriatics and myotics. The movements of the iris during the process of the accommodation are therefore to be looked upon as belonging exclusively to the class of "associated" movements; this fact has indeed been already shown us by Becker, whose observations went to prove that during the accommodation for near objects, the pupil always contracts a longer or shorter time after the accommodation proper.

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(Reprint from "Virginia Medical Monthly.")

A New Method of Operating for Total Symblepharon by means of the Transplanation of a Rabbit's Conjunctiva into the Newly Separated Cul-de-Sac. By GEORGE REULING, M. D., Surgeon in Charge Maryland Eye and Ear Institute, Baltimore.

It is well known that all operations so far recommended for the successful removal of extensive adhesions between the eyeball and the inner surface of the lids have proven almost fruitless, especially when the base of such adhesions involved the greater portion or the whole of the eyelid. In cases of only slight adhesions (bridges) indeed, the normal movements of the eyeball may be re-established by a mere dissection of the connecting band. When, however, the eyeball is extensively adherent, all efforts to enable it to regain its freedom of motion have always been rendered futile by the reunion of the separated parts. Nor will the conjunctiva tolerate foreign substances calculated to prevent reunion. The ingenious experiments with shields of glass, horn or ivory, interposed between lid and eyeball, were therefore never productive of benficial results. The only operation for symblepharon (with a moderately broad base) which, so far, has successfully been peformed, is reported by Mr. Teale in the R. L. O. H. Reports, vol. 3, p. 253. This consists in the transplantation of portions of the surrounding conjunctiva, after all connections between ball and lid have been severed.

But how shall we operate in a case where there is no eligible conjunctiva to be had, on account of complete adhesion between both eyelids and ball? This condition is not infrequent, being often produced in consequence of a burn by molten lead or quicklime, or after long existing and injudiciously treated conjunctivitis granulosa with pannus.

Having met with a case of this kind, and being anxious of doing my patient as much service as possible, I asked his consent to try a new operation, viz: the transplantation into his eye of a rabbit's conjunctiva.

The particulars of the case are as follows:

Mr. H. D., a gentleman 62 years old, afflicted in both eyes with a most protracted granular conjunctivitis with pannus. He was suffering thus for at least fifteen years, during which time many exacerbations had taken place, and renewed crops of granulations, together with severe attacks of kerato-iritis had occurred.

It appeared that previous to placing himself under my treatment, most severe cauterizations had been employed, and many granulations had been excised by means of the scissors. In consequence of this procedure the wounded and greatly reduced conjunctiva united with the ulcerated surface of the cornea, thus forming, in course of time, a symblepharon of small extent, which, after oft-repeated operative interference, and especially after the gradual atrophy of the granulated conjunctiva, became so tightly adherent to the globe that finally a total symblepharon cum cornea resulted.

In order to obtain total separation between lower lid and eyeball, I dissected the lid by making my incisions parallel to the surface of the ball. By this means complete mobility of the lower lid was produced, and a cul-de-sac of normal dimensions established. By this mode of procedure I produced, on the lower half of the ball, as well as on the whole extent of the lower lid, a raw surface deprived of all conjunctiva. Into the defect I had thus constituted I sewed the entire half of the conjunctiva of a living rabbit in such a manner, with twelve sutures, that the inner surface covered the whole defect; when, therefore, the lower lid was readjusted in its natural position, all danger of subsequent reunion between eyeball and lid was done away with.

The operation was not immediately followed by anything worthy of particular mention. The application of a pressure bandage was omitted, in order to guard against a new crop of granulations. For the same reason I did not think it advisable to make use of warm fomentations, as recommended by Prof. Nussbaum, of Munich, in the operation of skin-grafting. The only topical application I allowed consisted in pieces of linen dipped into tepid water, and frequently changed; I also instilled a drop of a solution of atropine every two hours, so as to prevent possible iritic attacks. Twelve hours after the operation no sign of union was visible, the new conjunctiva being perfectly white and bloodless. Neither sloughing, however, nor any perceptible loss of epithelium had taken place.

Twenty-four hours subsequent to the operation the rabbit's conjunctiva evinced some slight injection and swelling, as was shown by the thread next to the caruncle, all the other portion being as white and unchanged as before. A very small part protruded over the margin of the lid and showed signs of decay. It was therefore cut off down to the edge of the lid.

Thirty-six hours after the operation.—Injection around almost every thread (stitch), and a reddish hue throughout the new conjunctiva.

Forty-eight hours after the operation. — The conjunctiva entirely injected with blood and tightly adherent to the edges of the wound. After the removal of all the sutures I was agreeably surprised to find that a new conjunctival sac had been established.

The above report is written eight days subsequent to the operation. The cornea, which had been excessively opaque, is gradually clearing, so that fingers which could be distinguished at only half a foot, are now counted at the distance of four feet. The operation has therefore been successful, as the cornea is growing more and more transparent from day to day.

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(Reprint from "Knapp's Archives of Ophthalmology and Otology.")

Report of a Case of Detachment of the Choroid from the Sclerotic after an operation for Cataract, with partial loss of Vitreous Body. By Geo. Reuling, M. D., Surgeon to the Maryland Eye Infirmary.

Although the following case came under observation at the Eye Hospital of Wiesbaden, Prof. Pagenstecher, Surgeon in charge and I, first assistant, it is nevertheless of such great interest and of such rare occurrence (only one similar case being on record), that I have determined to give it a place in this pamphlet.

The fact of the occasional separation of the choroid membrane from the sclerotic has been demonstrated by the ophthalmoscope and by dissection.

Von Gräfe had already, in 1854, diagnosed, by the aid of the ophthalmoscope, a similar case, and has described (Archiv für Ophth., Bd. IV., Abth. 2) two other cases which he observed in 1855 and 1857. These three cases had, as a common feature, separation of the retina superadded to and consequent upon the choroid displacement, with total atrophy of the ball. His opinion as to the physical cause of the lesion could be only approximatively given in the absence of opportunity for dissections. The result to which he however arrived was, that the lesion had its origin in effusion, either serous or sanguineous. The fact of the existence in one case of effused blood at the dependent portion of the periphery of the prominent detached choroid seemed, however, to Gräfe to favor the view of an apoplectic origin, while in others the subsequent separation of the retina by serosity, and the consequent atrophy of the globe, suggested that the whole process might be attributed to that serous effusion which has been so prominent in the later phenomena. Liebreich has also (Traite practique des maladies de l'œuil par Mackenzie : Section: Decollement de la Choroide d'avec la Sclerotique), as well as in Archiv für Ophth., Bd. V., Abth. 2, described similar cases, and enriched our knowledge by many interesting observations, and also by a very valuable drawing of the ophthalmoscopic appearances in a case of detachment of the choroïd (Tab. vii., fig. 4 of his Atlas). The rarity of this affection readily accounts for the small number of pathologico-anatomical researches. We find, however, one recorded by Ammon (Zeitschrift für Ophth., Bd. II., p. 24) and three by Stellwag (Ophth., 1856, Bd. II., p. 98, par. 142, Anmerk. 109). The greatest interest attaches to cases very fully reported with valuable details by Iwanoff in Archiv für Ophth., Bd. XI., Abth. 1, and also by Prof. Knapp in his work upon Intraocular Tumors.

The latter author describes, page 194 (261 Am. edit.), a very interesting, and at the same time instructive case, in which, about seven weeks after the extraction of the opaque lens, the whole of the corpus ciliare and the attached choroid were found separated from the sclerotic in the enucleated eye. Prior to enucleation, Knapp had already, by the aid of the ophthalmoscope, recognized a prominence, of hemispherical shape, which he took for an encysted coagulum of blood rather than for a melanotic sarcoma, to which it bore a great resemblance. In this case (vide Fig. 69, op. citat.) the sclerotic was much thinner than is normally the case in the ciliary region, and considerably thickened at the equator, so that Knapp attributed the serous separation of the parts to a plastic sclerotitis, due to the forcible extraction of the lens, which caused at once the thickening of the sclerotic, and the effusion of serum between this membrane and the corpus ciliare, and thus gave rise to bellying of the choroid. In an article by my friend Dr. de Gouvea, which appeared in Gräfe's Archiv (Bd. XV., Abth. 1.) are related two cases of separation of the choroid, both of which (cases II. and III.) were attributed to a considerable puffiness (Auflockerung) of the lamina fusca, due to structureless exudation.

Choroid detachments due to hemorrhage from the posterior surface of the retina, after operation for cataract, together with the anatomical appearances, have been described by Mr. Hulke, and after him by Bowman, White Cooper, Lawson, and others. Such hemorrhage occurs only in eyes previously diseased, and my own experience offers a very striking case in which, immediately after an otherwise normal operation for the extraction of both lenses of an old lady, the subject of arterial atheroma, a severe attack of pain was accompanied by the protrusion in both eyes of the vitreous body through the wound in the cornea, followed by swollen and cyst-like retina and choroid. At the same time there was a very severe hemorrhage from the choroidal vessels, which could only be restrained by styptics and compressing bandages. Of course both eyes were totally destroyed by the ensuing suppuration.

I shall now relate the case to which the title of this communication refers.

In the spring of 1867, a peasant woman, aged 45, the subject of double uncomplicated cataract, was admitted for operation into the Eye Hospital at Wiesbaden.

State on Admission.—Right Eye: Only motions of the hand perceptible, with perfectly responsive pupil, and undiminished field of vision.

Left Eye: Fingers at eight feet. The patient was an anæmic and easily excitable subject, belonging to the laboring class, and was operated upon while under chloroform by Dr. Pagenstecher. Lower flap operation and large irridectomy, with attempt to slip out the lens by rocking motion (Schlittenmanöver), which being unsuccessful, Pagenstecher introduced his own scoop between the posterior surface of the lens and the fossa hyaloidea, and by the aid of slight pressure upwards, and careful traction, succeeded in separating the lens from its connection with the zonula, and accomplished its extraction with the unbroken capsule. A small quantity of vitreous body, to the extent of about 15 drops, and of normal appearance, escaped through the wound, immediately following the lens. The cornea collapsed to a moderate degree, and there was a slight trace of hemorrhage in the anterior chamber. The corpus vitreum had, with the exception of a small particle caught in the wound, entirely regained its normal position.

Solution of atropia was now instilled and the eyes bandaged.

1st day. The first 24 hours were passed favorably. The patient had vomited somewhat on two occasions on awakening from the narcosis. This, however, did not prevent the prompt and entire closure of the wound. Cornea smooth and convex, aqueous humor almost perfectly clear, only a slight streak of blood on the face of the iris. The patient counts fingers at 4 feet.

2d day. Patient very comfortable, and all well.

3d day. Patient complains of great feeling of fatigue, depression, and chilliness. No complaint as to the eye. Fingers counted at 6 feet. Temperature and pulse rate markedly increased towards evening, and slight delirium appeared. The remission in the morning was accompanied by a diminution of temperature amounting to 1°. Two days subsequently a notable increase in the area of splenic dulness could be perceived, profuse painless diarrhœa appeared, and in the night of the 6th day the delirium became furious, so that the patient tore off the bandages, and thus gave rise to a gaping of the wound and hemorrhage into the anterior chamber. The bandages were immediately replaced, and the patient, uncontrollable in her delirium, was sent to the city general hospital, where, after three weeks, she gradually sank into excessive weakness and death. The post-mortem examination yielded comparatively slight changes in the mucous membrane of the ileum, consisting principally of ulcers in the process of healing, and a corrugated appearance of the capsule of the spleen, due to the contraction of the previously swollen organ. The brain and optic tracts showed no perceptible lesion. The eye was now enucleated, and immersed for the space of two weeks in Müller's fluid. It was then carefully divided in the horizontal diameter into two equal sections. This yielded the interesting discovery of the total separation of the choroid from the sclerotic, between which two membranes a jelly-like exudation to the extent of 0.5‴ in thickness was spread. It had been unquestionably in a fluid state prior to the hardening in Müller's fluid. The separation extended from the circumference of the optic disc to the ciliary ligament, and was so complete, that the exudation removed the choroid from the sclerotic over its whole extent to an almost equal degree. The arteriæ ciliares posticæ breves, and the ciliary muscle near the canal of Schlemm, constituted the only connection between sclerotic and choroid. No detachment of the retina was anywhere perceptible ; choroid and retina were in perfect apposition and showed no trace of wrinkle. The corpus vitreum was perfectly normal, and a microscopical examination of the structure discovered no change. The gelatinous exudation was perfectly clear, with the exception of a few points of slight opacity. Under the microscope there was no trace of structure visible, only here and there were a few granular fibrils and particles of coagulated fibrin, to which were attached a few pigment grains and cells of the lamina fusca.

This case suggests diverse reflections. The cause of the choroid detachment is simply to be sought for in the vacuum produced by the removal of the lens and the escape of part of the vitreous body. It is not probable that the accident happened at the time when the patient violently removed the bandages, and thus opened the wound and occasioned the hemorrhage ; for on this occasion there was no loss of vitreous body. The loss of aqueous humor could have been but light, since the anterior chamber was perfect as I replaced the bandages. It is thus rendered exceedingly probable that the total detachment of the choroid does not involve total loss of sight so long as a connection between this membrane and the retina is unbroken, or, at least, that it does not lead to this result in the earlier stages of the lesion— for it will be remembered that three days after the operation the patient could count fingers at six feet distance. The art. cil. post. brev., in circumference of the optic disc, were, as before mentioned, not ruptured (the exudation between sclerotic and choroid was not blood-stained), and therefore there was an uninterrupted blood supply from this source as well as from the branches of the art. cil. long. et ant., which course backwards from the ciliary body, and, anastomosing with the terminal branches of the art. cil. breves, form a delicate network which extends to the ora serrata, and is closely continuous in the neighborhood of the entrance of the optic nerve with the capillary vessels of this nerve (*Leber*). There is no doubt that a longer duration of the affection under consideration would lead, through disturbed nutrition and gradual separation of the retina, to total blindness ; and it is to be regretted that after the manifestation of phenomena of excitement in our patient, no test of vision could be had, and that the bleeding into the anterior chamber prevented all attempts at ophthalmoscopic examination.

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several interesting
cases.

NAME	DATE DUE